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ABSTRACT

This publication, the last in a series of seven for elementary schools, is an environmental education curriculum guide with a focus on waste management issues. It contains a unit of exercises selected for sixth grade students focusing on community solutions to solid waste pollution. Waste management activities included in this unit seek to facilitate an environmental awareness and sense of environmental responsibility. The unit presents the following major ideas: (1) solid waste management is a very important issue in all communities; (2) because of the complexity of the issues, decisions regarding solid waste management are often difficult; (3) individuals and communities have several options they can pursue to improve solid waste management; (4) citizens need to learn about waste management problems, and some disposal methods and habits must be changed; (5) in many communities, local laws need improvement before litter and solid waste problems can be adequately managed; and (6) landfills must be managed properly to avoid water pollution and other problems. In the activities students are guided in studying their own locality's solid waste problems and in designing a model waste disposal plan. Students can apply the knowledge gained in the community study with a solid waste management role simulation activity. Each activity in the unit meets the Virginia Department of Education Standards of Learning Objectives for Science; however, the material is designed to be interdisciplinary and may also be used to meet social studies, health, language arts, mathematics, or art requirements. A list of additional resources (articles, magazines, educational curricula) is included. (MCO)

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OPERATION WASTE WATCH
THE NEW THREE RS FOR ELEMENTARY SCHOOL

ED347079

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GRADE 6

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OPERATION WASTE WATCH THE NEW THREE RS FOR ELEMENTARY SCHOOL

Grade 6 Foreword

Ten years ago, the Division of Litter Control developed a curriculum for elementary schools called **Operation Waste Watch**, an environmental education curriculum with a focus on waste management issues. The seven grade level, multi-media units have been widely used in classrooms across the state and are considered a national model for environmental education. Each unit came with a number of peripheral teaching aids, including film strips, classroom posters, and coloring or comic books, which emphasized the theme of the unit and were designed to be taken home by the students, thereby extending and strengthening the original messages of litter control and recycling.

The instructional core of the unit was in the activity cards which presented several lessons for class or individual participation. Each teacher could select among the activities, incorporating only that material which he or she wished to use. **Operation Waste Watch** materials were designed to be interdisciplinary and may be used to meet science, social studies, health, language arts, mathematic, or art requirements. Activities in the Sixth Grade level of Operation Waste Watch correlate with several of the science objectives, as well as more generally with social studies, language arts, health, and art objectives.

This new edition of our curriculum comes in a markedly different package: a Teacher's Workbook, rather than the slip case filled with materials. Our annual surveys showed that the film strips while desired, were rarely used. The cards were hard to keep track of. The original format was never designed for refills, continual orders, or maintenance over a period of time. Many unit components got lost or strayed. As teachers moved to other schools, **OWW** moved in bits or pieces. After some ten years, it was time to update the bibliography and modify some of the activities to take into account the current state of the world of solid waste. All these conditions translate into a simpler format which will be easier to order and use. We hope you will enjoy this second edition of **Operation Waste Watch: The Elementary New Three Rs**.

NEW THREE RS FOR ELEMENTARY SCHOOL

The theme of the sixth grade unit is **Community Solutions to Solid Waste Pollution**. In this unit students will study their own locality's solid waste problems and design a model waste disposal plan for an imaginary community. In a role simulation, students will apply the knowledge they have gained in studying their own community to make decisions concerning the solid waste management for a hypothetical community, Glen City.

Sixth grade students can begin to appreciate the complexities of solid waste management and understand the fact that individual habits and community-wide attitudes and norms must be changed if we are to see improvement in municipal solid waste management.

Major ideas of the unit include:

- Solid waste management is a very important issue in all communities.
- Because of the complexity of the issues, decisions regarding solid waste management are often difficult to make.

- Individuals and communities have several options they can pursue to improve solid waste management.
- Citizens need to learn about waste management problems, and some disposal methods and habits must be changed.
- In many communities, local laws need improvement before litter and solid waste problems can be adequately managed.
- Landfills must be managed properly to avoid water pollution and other problems.

At the completion of the unit, the student will be able to recognize that each American throws away a large amount of waste every day. Each student will be able to identify some of the solid waste management problems facing his/her community today. Working as a class, the students will design an improved solid waste management plan which is educational, workable, and affordable. Students will be able to define common terms associated with solid waste management, and students will as a general practice in the classroom, recycle or reuse materials they would have previously thrown away.

Litter is a very accessible pollution and one even young children can comprehend. Children may be able to do very little to solve other environmental problems, but they can learn to dispose of waste properly, help recycle household and classroom items, and come to understand how their own behavior affects the environment. A waste management unit is an excellent place to begin

creating environmental awareness. From this step, young people can develop a strong sense of environmental responsibility.

Many of the activities in the sixth grade unit of **Operation Waste Watch** correlate with the science objectives for the Standards of Learning in grade 6. Because so much of what is done in this unit involves research and problem solving, all of the general science objectives for the Standards of Learning correlate with this unit.

The program will meet the following Standards of Learning for Science as presented by the Virginia Department of Education.

6.2
The student will use process skills as a basis for solving problems, answering questions, and providing explanations.

6.3
The student will use appropriate materials, tools, and units of measurement in conducting scientific observations.

6.4
The student will use various resources to explore topics of personal interest and career opportunities in areas of science.

6.14
The student will describe the dependence of organisms upon nonliving things.

6.16
The student will compare and contrast natural cycles

6.17
The student will describe the interaction and interdependence of plants and animals.

6.20
The student will explain positive and negative effects of man's interaction with the environment.

6.21
The student will describe the uses of and conservation of renewable and nonrenewable resources.

NEW THREE RS FOR ELEMENTARY SCHOOL

Many of the other content areas have objectives which are met through the activities in this unit

Social Studies

6.2
The student will identify some environmental and cultural factors that influence the lives of people within a nation.

6.5
The student will interpret special purpose maps (weather, population, etc.) charts, diagrams, and political cartoons.

6.6
The student will identify world problems and suggest possible solutions and consequences.

Language Arts

6.3
The student will participate in various prewriting activities.

6.5
The student will write a paragraph containing a main idea and several supporting details.

6.10
The student will recognize the use of persuasive techniques.

6.11
The student will use the card catalog to locate sources of information.

6.12
The student will select and use appropriate reference sources in gathering information to answer specific questions.

6.13
The student will use mass media to obtain information.

6.15
The student will understand that personal values and points of view influence what is said, heard, and read.

Art 6.7
The student will investigate the use and impact of persuasive techniques in art (especially in graphic and electronic communication.)

Art 6.8
The student will indicate how art reflects various cultures, periods, or civilizations.

Art 6.10
The student will utilize fantasy as a means of expression.

Classroom sets of comic books entitled **Where's My Science Report?** may be ordered from the Department of Waste Management by classroom teachers. Please allow three weeks for delivery. Contact:

Materials Technician
Department of Waste Management
Eleventh Floor,
James Monroe Building
Richmond, Virginia 23219
804/786-8679

LEVEL: Sixth Grade
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Printed on Recycled paper

COMMUNITY SOLUTIONS TO SOLID WASTE POLLUTION

Art Projects

(SOL Objectives Art 6.8, 6.10)

Have the students bring in some solid waste, either litter or something which had been discarded. It should be clean when they bring it in to the class room. Class members should create a sculpture, collage, painting, or other form of art from the bits and pieces of trash they brought in. Have an art show and display the masterpieces.

Waste Survey

(SOL Objectives Science 6.2, 6.3, 6.21; Social Studies 6.2; Art 6.7)

Members of the class should look for evidences of solid waste on their way home from school. Have them look for trash in garbage cans, abandoned or "junk" automobiles, rubble from a demolished building, unused building materials, discarded home appliances such as refrigerators, litter along the roadside, lawn clippings or brush piles, old tires. Tell the children to list what they find and where they see it.

The next day in class, ask the children to share some of their findings, then ask, Are there some places where there is more trash than others? What are some places where there is the least amount of trash? Where might you find more trash?

How Much?

(SOL Objectives Science 6.3, 6.20, 6.21; Social Studies 6.2; Art 6.7)

List the items and tally the amount of individual pieces of trash each student in the class discards after eating lunch. Then have the class figure how many of each of these items the total sixth grade in the school throws away each day.

Several schools have monitored cafeteria throwaways for a period of several days, then made posters and graphs showing how many milk cartons, juice cartons, sandwich bags, banana rinds, apple cores, ice cream wrappers, and so on are thrown away during the period of a week.

Where does the trash go after it is taken from the cafeteria? How much of the lunch time trash is recycled?

A Mini-Landfill

(SOL Objectives Science 6.2, 6.3, 6.14, 6.17, 6.20; Social Studies 6.2)

This activity is a variation of one presented in the Third Grade level. It is important to stress to the students that this facility would not meet current regulations. To make sure the students understand this, they can use the regulations they have gotten in the Laws activity and show that the moisture, sunshine, and lack of compaction will make a big difference. The findings of this activity are always of high interest to the class.

Materials:

food scraps, newspaper, cardboard, fabric, soap chips, glass, (pieces of) aluminum and Tinned steel cans, plastic, copper wire

Cardboard shoe box

piece of plastic large enough to line the shoe box

tooth picks

several pieces of string, about 6 inches long

masking tape

several small pieces of cardboard

enough soil to fill the box 2/3 full

water

Line the box with the plastic, to keep the moisture from bursting the box. Then put in about half the soil. Do not use potting soil, which is sterile; you need the organisms present in regular soil to break down the waste products you are landfilling.

Tape a toothpick to one end of each piece of string and a piece of cardboard to the other; then tape the waste object to the toothpick and write its name and the date the items were buried on the cardboard.

Cover the items with the remaining soil. Add some water. Place the box in the window where it will get as much sun as possible. If the weather is particularly bright, you may need to add more water to keep the soil moist. Wait for two weeks before the next step.

Record the date on which you examine the items. Carefully dig up the buried items. Use a magnifying glass to observe all the changes that can be identified.

COMMUNITY SOLUTIONS TO SOLID WASTE POLLUTION

The following questions should be answered.

- Which items in the shoebox have decomposed the most?
- Are the decomposing items manufactured or natural?
- Are the decomposing items biodegradable?
- Which items have just started to decompose? Why are they decomposing more slowly than the first group?
- Which items show no signs of decomposing? Can you tell why? Will they remain unchanged forever? Are they made of materials which should be reused or recycled instead of being buried in landfills?
- Why might mold form on the mini-landfill? What would happen if the facility were made of sand and there were no water? What happens to waste left out in the desert?
- Suppose the waste had been put in potting soil. Would the degradable wastes have decomposed as quickly? Why or why not?
- Did you notice any space around some of the items as you dug them out? What do you think caused that space to form? If this happens in a full sized landfill, might it affect how the land could be used after the landfill is filled with trash?
- What would happen to water if you let it trickle through the landfill? Would you want to drink it?

Laws

(SOL Objectives Science 6.4, 6.20, 6.21; Social Studies 6.2, 6.6; Language Arts 6.3, 6.11, 6.12)

Recent years have seen considerable legislative activity in the realm of solid waste management. As of July 1, 1991, all localities in the state of Virginia are required to have solid waste management plans and these are required to have a recycling component. Check with the public works department, the local litter control and recycling program, or the local recycling director for a copy of the laws for your locality. Have the children work in groups to find out:

- what are the responsibilities of householders to dispose of trash properly?
- what do apartment dwellers do about trash disposal?
- what kinds of programs will the locality be operating for recycling?
- how much of the local waste stream is being recycled in the current year?

- what plans or programs are there for school recycling?

- what kind of business recycling programs are there?

Community Interviews

(SOL Objectives Science 6.2, 6.4, 6.20, 6.21; Social Studies 6.2, 6.6; Language Arts 6.3, 6.5, 6.10, 6.12, 6.13, 6.15)

For the last several years, we have all heard about the crisis in local solid waste management: so much trash, and so little space. As is often the case in issues involving money, perceptions or anxieties, and a vast amount of media coverage, people are often surprised at what they know — or do not know. Give the students in the class the following list of questions and ask them to ask their parents and one other adult living in their neighborhood. They should write down brief answers to the questions and bring the answers in within a day or two.

1. Do you think solid wastes are disposed of properly in our community?

2. Would you like to see anything changed about the way the community handles its solid waste?

3. What could the local government do to help solve the solid waste problems? What could state government do?

4. Do you know what the laws are in our community about disposing of trash and keeping property clean?

5. Do you know where you can take glass, plastic, paper, and aluminum to be recycled? Collect a variety of answers.

Putting all the answers together, the class can make a final report, listing the answers. You may want to have them create graphs showing how many answered in a particular manner. Perhaps the class can combine their information in groups, according to subdivision or neighborhood, and each group present a summary of the responses they got.

Additional Activities:
Have the students give their personal opinions to the following questions.

1. Do you think all solid waste is ugly, or are some things in solid waste pretty?

2. Is it important to have the outdoor environment look beautiful? Why or why not?

3. Is it important to keep the indoor environment attractive? Why or why not?

As a summary to answering the questions, students should write a short story telling how someone would feel in a beautiful outdoor environment or an ugly outdoor environment — students should choose which type to write about.

COMMUNITY SOLUTIONS TO SOLID WASTE POLLUTION

Solid Waste in our Community

(SOL Objectives Science 6.2, 6.3, 6.20, 6.21; Social Studies 6.2; Language Arts 6.3, 6.10, 6.15)

Class discussion using the following questions will begin to heighten the class awareness of the magnitude of solid waste management.

1. What do we mean by the term waste management? (Everything that is done to rid the community of its waste, including collecting, transporting and processing.)

2. Where is waste generated here in this school? Where is the most solid waste generated in our homes? In our neighborhoods?

3. What are the steps we take in our homes to get rid of our solid waste?

4. Once it is outside the house, who knows what happens to our solid waste? Who can give the steps from trash can to final disposal? Does this community have a sanitary landfill? Where are the recycling centers? How many people take recyclables to dropoff sites? Do any neighborhoods have curbside collection?

5. Including the people in your family, how many people does it take to dispose of the solid waste your family generates?

6. What kind of equipment is used to get rid of our solid waste? What do the sanitation workers use to pick it up? What is it carried in?

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7. Does this community use an incinerator?

8. What are some other methods of disposing of solid waste besides landfilling and incineration?

9. What would happen to our community if we just threw our solid waste into the streets the way people did hundreds of years ago? How would it smell? What would happen to the health of the residents of this community?

10. Why is it important to handle our solid waste properly?

Introducing Glen City

(SOL Objectives Science 6.2, 6.3, 6.4, 6.14, 6.16, 6.20, 6.21; Social Studies 6.2, 6.5; Language Arts 6.3, 6.5, 6.10, 6.11, 6.12, 6.13, 6.15)

The next group of activities focus on and culminate in a role simulation. Students will take the part of local citizenry and government officials who are trying to grapple with the problem of how Glen City will handle its sold waste. Its current landfill is almost full, so another will need to be sited. Also, the general appearance of the city has been the object of some concern, because roadside litter, trashy construction sites, and messy areas around dumpsters have upset many people. Saving money is a primary interest of all the people. Therefore, difficult decisions must be made. Class members will participate in their roles in several committees.

Glen City Information

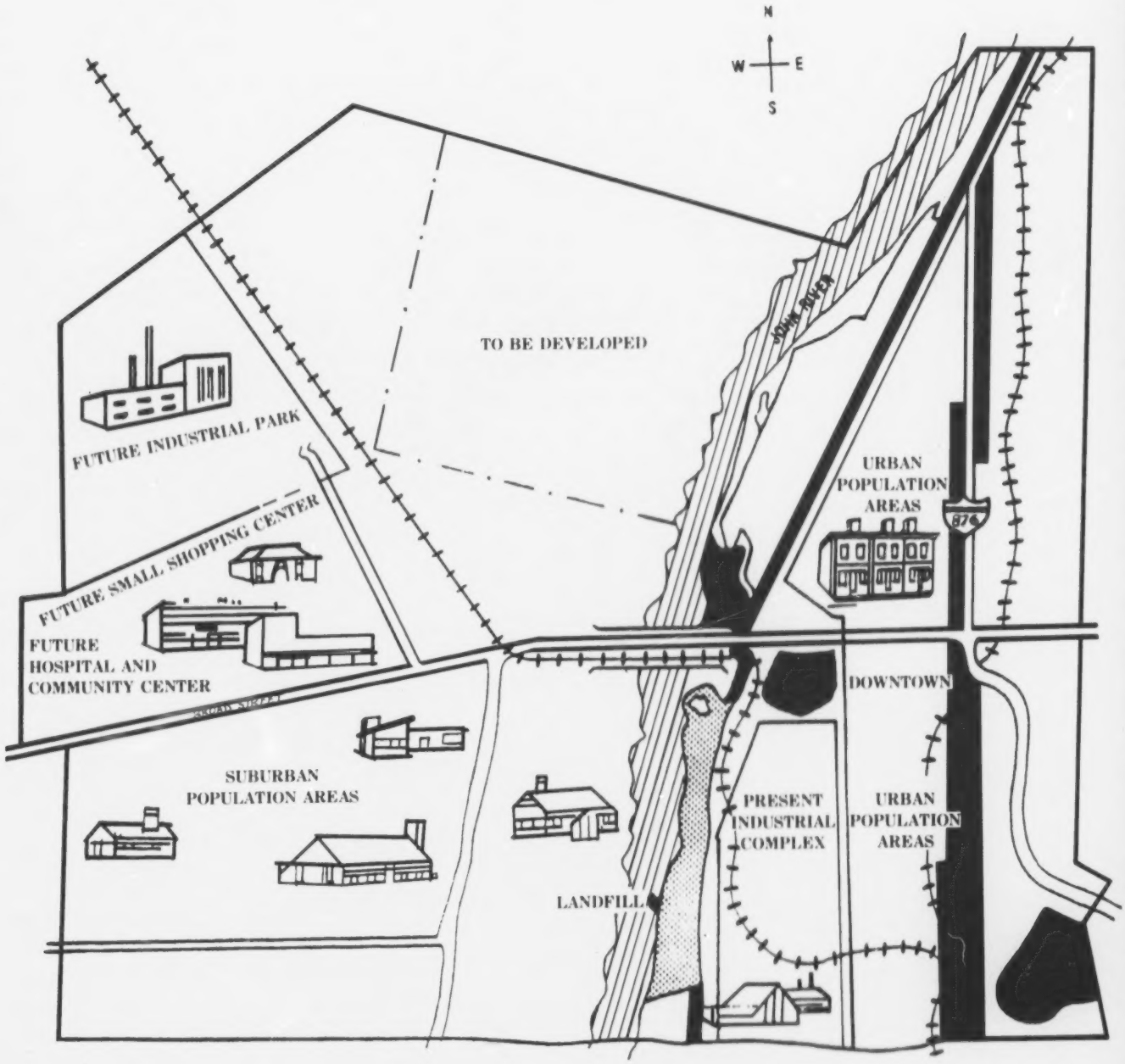
Glen City is a small city, about 25,000 population. The area shown on the map is about five square miles.

The John River is 300 yards wide and flows from north to south. It can handle small boats and logs but not large barges. The black area shown along the bank is a park with swimming, boating and fishing facilities. Other city parks are also shown as black areas.

The landfill is shown by the dotted area. Plans now are to make it a park when it is full, which is estimated to be in about 3 years.

A major four-lane limited access highway, Interstate 876, runs north-south through the city. The city is also served by a major railroad and has a local bus service. It is about an hour's drive from a major city.

GLEN CITY



(from **Waste In Place**
by Keep America Beautiful)

The area expects to have many new businesses and people move in during the next few years. It has sufficient energy resources for current and expected needs. Several large industrial and commercial corporations signed agreements to buy with a contractor who is building a large industrial park west of the river. A group of local businessmen are trying to buy some land between the future industrial park and Broad Street, where they plan a small shopping center as well as a small hospital and a community center.

Most of the population lives east of the river. Only about 30 percent of the population lives west of the river. Most of the current industry is located east of the river. The municipal area has a strong work force.

At one time, the city operated an incinerator, but it was closed down because of air pollution control laws.

The city's downtown area has just received a $350 million grant for improvement.

The Research Committees

These groups will gather information about the various aspects of the city's solid waste and will make suggestions to the City Council about what Glen City should do with its waste.

The Legal Committee will research what rules Glen City has about solid waste management. Their responsibilities include:

- ascertaining the current laws in your community about solid waste. Is open burning allowed? Do parking lots have trash receptacles? Are there requirements about the size of dumpsters?
- What kind of fines or penalties are given for breaking these laws? Is enforcement of the laws considered strong enough?
- What is the local solid waste plan, as required by the Virginia Waste Management Act?
- What other kinds of laws might there be to tell people how they should manage their waste? Consider recycling and reducing amounts of waste. Remember that many people are unhappy about a general dirty or littered appearance in many places in the city.

COMMUNITY SOLUTIONS TO SOLID WASTE POLLUTION

- In the Glen City information, some of the growth and development plans may have a strong impact on future waste management plans. What are some new requirements which might be put into place?

The Legal Committee should be prepared to present proposed new rules and give their reasons for encouraging their adoption.

Disposal Methods Committee will look into various methods available to the city for disposing of its solid waste. If it is possible for field trips to be arranged to a local landfill and/or a recycling center, these would work very well. Students should find out as much as they can about how the landfill is operated, whether incineration is used, or has been used, and what kinds of collections of recyclables are being done. In addition to someone from the Department of Public Works, the local litter control and recycling coordinator would be a good choice to come and talk to the class. (If you cannot find the name and phone number of the litter control and recycling coordinator, contact the Virginia Department of Waste Management, Division of Litter Control and Recycling at 804/786-8679.)

In recent years, many articles have been written about municipal solid waste management. Many libraries subscribe to *Garbage*, the magazine devoted to all the aspects of this subject. This committee should perform a literature search on the aspects of waste management including sanitary landfills, incineration, source reduction, recycling, resource recovery, and waste to energy. The group should come up with advantages and disadvantages for the various methods and make recommendations to city council.

Landfill Siting Committee can gather much of their information in local current practices if the class goes to the landfill for a field trip. Much of the information about location, hours, and what can and cannot be disposed of is probably available in a brochure or flyer. The committee will also want to know about the size a developing community will need for its landfill.

Other considerations will include:

Access roads, amount and size of trucks which come into the landfill.

Requirements in trapping water and avoiding ground water contamination; liners, etc. need to be considered. The regulations about landfills are in the Code of Virginia in the Waste Management Act. Approximate costs can be gotten from public works officials. Much about landfills which at one time were up to the local authorities has now been made state law.

What kinds of earth moving equipment will be needed?

When the group considers where a new landfill will go, students will also need to take neighbors' reactions into consideration. Will the trucks be going through neighborhoods? How much noise or smell is likely to affect people living or working near this new site?

Students should consider the location of the sources of most of the waste, the problems of contaminating the river, and traffic problems as well as health and property value concerns. However, they must also be aware that something has to be done with the waste. Not making arrangements to dispose of this waste is also illegal. However, siting a landfill within city limits is not the only choice open to them. They may also consider forming a partnership with the adjacent county for a joint landfill, or building a new incinerator, particularly a waste to energy facility.

For the past several years, newspapers around the state have had a great number of features about waste disposal, and many counties and cities have been dealing with this issue.

COMMUNITY SOLUTIONS TO SOLID WASTE POLLUTION

Providing some of that material will help the children see what level of decision this simulation is asking of them.

The group should bring to the city council at least two suggested sites with their respective advantages and disadvantages.

Recycling Committee will work to divert as much material from the city's waste stream as it can. The recycling coordinator for your locality can tell the students about your local recycling program. The students will be interested in types of materials which are being collected, types of collection systems, possibility or extent of curbside collection programs. They will need to consider cost of containers, need for trucks, availability of markets. They will also want to look at and recommend some purchasing of goods manufactured from recycled materials, because until that part of the cycle is strong, markets will also be weak. One large part of the waste stream which they will want to think about are yard wastes: grass, leaves, tree limbs.

Recycling can extend beyond householders. What are some things that businesses can recycle? What about local government offices? Are the schools recycling and materials? Students can find out how much of the waste stream is being recycled in your community and make their recommendations for Glen City and its recycling program to the city council.

City Council. These are the decision makers. They will listen to all the various committee reports and then decide what will be done. One member of each research committee will become a member of the city council.

To the extent that it is possible, students should be on the committees of their choice. They should all be aware of their responsibilities, and deadlines. The committees will assign their research and fact-finding jobs. Each committee should have a committee notebook where the infor-

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mation it has gathered is kept. All the committees will prepare written reports outlining what they have found out and what they recommend. The committees will select their individual secretaries and spokespeople.

City Council Meeting

At the City Council meeting, the following four council members will hear reports and recommendations from the Research Committees. Council members will sit at the front of the class room facing the rest of the class. Research committee spokespeople will come up to the front of the room to give their reports. Council members will take the following roles:

City Council Chairperson is also president of the bank. He or she wants to see Glen City grow, and knows that it will not continue to do so if it isn't a clean, pleasant, environmentally sound community.

Council Member Jones is very worried about taxes. While Jones wants Glen City to be clean, attractive, and healthy, if it will cost money, Jones is against it.

Council Member Smith does not pay attention to what is going on and doesn't remember what has been said. All the questions Smith asks have already been answered.

Council Member Green want to be sure that whatever is decided is the best decision that could be made. He or she wants to know the advantages and the disadvantages, and understands that there will be some disadvantages to any choice that is made.

The Chairperson will bring the meeting to order and will call on the spokespeople for the research committees Council members will hear the complete report before asking questions of the committee members. Once

all the reports have been heard, council members and other committee members can ask questions of each other.

Once all the questions have been answered, council members should list the recommendations they each favor, and then should meet together to come to a con-

sensus. They probably will not accept all the recommendations of any of the research groups. After they have decided what they want to do, the Council Chairperson will read the decision to the rest of the class. If members of the class have questions about what has been decided upon, they should ask council members. Council will tell the class why they have chosen as they did.

Once the simulation is over, have the class discuss how it worked. Have the group cover:

- what they learned about solid waste management;
- how they felt about working in their groups and participating in the simulation;
- what they learned about how personal decisions can affect the lives of others;
- what they learned about how their own opinions might have to be bent or overlooked when working with a group of people.
- Was the class happy with Council's decision?
- Did Council make the right decisions about which recommendations should have been selected and which should have been left aside?

Glen City and its waste management problems are adapted from **Waste In Place** © Keep America Beautiful, Inc., Mill River Plaza, Stamford, CT.

ADDITIONAL RESOURCES

Articles:

Rathje, William; "Once and Future Landfills;" *National Geographic*, May 1991; published by the National Geographic Society, Washington, DC.

Rathje, William; "The Garbage Crisis;" *Atlantic Monthly*; December 1989.

"Reading, Writing, and Recycling, A Catalog of Education Materials;" *resource RECYCLING*, December 1990, published by Resource Recycling, Portland OR 97209.

"Recycling Makes the Grade in Schools," *Reusable News*, Spring, 1990; United States Environmental Protection Agency; RCRA Information Center, 401 M Street S. W., Washington DC 20460.

"The Trashing of Virginia;" series of articles printed in the Richmond *Times Dispatch*; August 26-29, 1990; Richmond Newspapers, Inc.; Richmond VA 23261.

Magazines:

Garbage: The Practical Journal for the Environment; published bi-monthly by Old House Journal Corp.; 435 Ninth Street, Brooklyn NY 11215.

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resource RECYCLING: North American's Recycling Journal; published monthly by Resource Recycling, Inc.; 1206 N.W. 21st Avenue, Portland OR 97209.

Waste Age; published monthly by the National Solid Waste Management Association; Suite 1000, 1730 Rhode Island Avenue, N.W., Washington DC 20036.

Educational Curricula:

A Curriculum Activities Guide to Solid Waste and Environmental Studies (K-12); Institute for Environmental Education; 3200 Chagrin Boulevard, Cleveland OH 44124.

Garbage In America; Refuse Industry Productions, Inc.; P. O. Box 1011, Grass Valley CA 95945.

Garbage Reincarnation: Curriculum Guide (4-6); Garbage Reincarnation, Inc.; Post Office Box 1375, Santa Rosa CA 95402.

Let's Recycle (K-6, 7-12); The United States Environmental Protection Agency; Public Information Center, 401 M Street, S.W., Washington DC 20460.

Mobius Curriculum: Understanding the Waste Cycle (4-6); Browning Ferris Industries, Inc.; 8607 Roberts Drive, Suite 100, Atlanta GA 30350.

New Three Rs: Reduce, Reuse, and Recycle (6-12); Virginia Department of Waste Management; Eleventh Floor, James Monroe Building, Richmond VA 23219.

People and Their Environment (1-3, 4-6); A conservation project of the National Council of State Garden Clubs, Brentree Environmental Center; Brentree Farms, Inc., Milford PA; published by Bayberry Press; Port Washington NY.

Project WILD (K-6); contact Virginia State Coordinator Suzie Gilley, Wildlife Education Specialist; Department of Game and Inland Fisheries; P. O. Box 11104, Richmond VA 23230-1104.

Save It! Easy Environmental Tips to Save the Earth; developed by Corporation for Public Broadcasting; published by Custom Print, Inc.; 2611 Shirlington Road, Arlington VA 22206.

Think Earth Environmental Education Program (K-3, 4-6 available 1992); Educational Development Specialists; Think Earth Customer Service, 5505 East Carson Street, Suite 200, Lakewood CA 90713.

Waste: A Hidden Resource (7-12); Keep America Beautiful, Inc.; 9 West Broad Street, Stamford CT 06902.

Waste In Place (K-7): Keep America Beautiful, Inc.; 9 West Broad Street, Stamford CT 06902.

Other Information:

The Fourth R: An Implementation Guide for School Recycling and Solid Waste Management; produced by Association of Vermont Recyclers; P. O. Box 1244, Montpelier VT 05601.

How to Set up a School Recycling Program; produced by the Council for Solid Waste Solutions; 1275 K Street N. W., Suite 400, Washington DC 20005.

Setting Up a Solid Waste Recycling Program in Schools; J. Winston Porter; produced by McDonald's Corporation; One McDonald's Plaza, Oak Brook IL 60521.

Department of Waste Management
Eleventh Floor, James Monroe Building
Richmond, Virginia 23219,
804/786-8679

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